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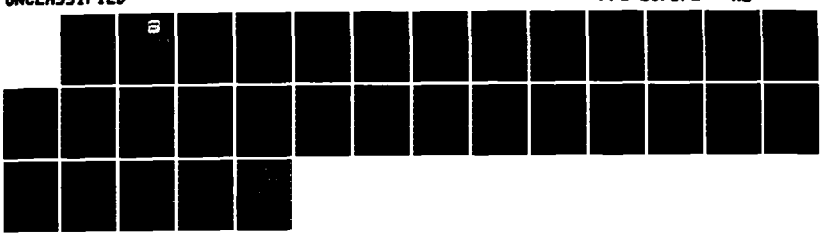

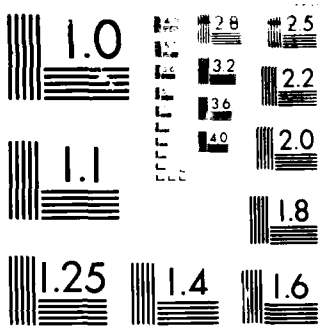

STUDENT ESSAY

THE STRATEGIC DEFENSE INITIATIVE AND WEST EUROPEAN SECURITY

BY

COLONEL PAUL H.M. MESSERSCHMIDT

14 APRIL 1986

US ARMY WAR COLLEGE, CARLISLE BARRACKS, PENNSYLVANIA

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can reach any of their potential targets. The SDI program is designed to enhance allied security as well as U.S. security. One of the early options of the SDI, i.e., a defense against tactical ballistic missiles, is of vital importance for Western European security. SDI represents no change in the commitment to deferring war and enhancing stability.

USAWC MILITARY STUDIES PROGRAM PAPER

THE STRATEGIC DEFENSE INITIATIVE AND WEST EUROPEAN SECURITY

Individual Essay

by

Paul H.M. Messerschmidt
Colonel, Royal Netherlands Army

U.S. Army War College
Carlisle Barracks, Pennsylvania 17013
April 1986

ABSTRACT

AUTHOR: Paul H.M. Messerschmidt, COL, Royal Netherlands Army, Field Artillery

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INTRODUCTION

Prevention of nuclear war is an enduring worldwide objective, even from differing national paradigms. The desire of any nation to survive must be assumed in any rational assessment. The core question, however, is: At what costs?

The possibility of developing a system to stop enemy missiles on a large scale, before they could reach their targets, still must be investigated. So this is a question of research, and every discussion about such a strategic defense must be preceded by the statement that, in the present phase, it is too soon to draw final conclusions.

In this paper, I would like to describe how the Strategic Defense Initiative as a research into defensive technology might fit into the overall strategy for peace and stability in relation to West European security. Consequently, I want to discuss the following aspects:

- Evaluation of the plans;
- The Strategic Defense Initiative and Western security and the defense of West Europe;
- The Strategic Defense Initiative and the French EUREKA;
- West European participation.

The opinions expressed are personal, unless otherwise stated. Therefore, they do not necessarily represent the actual position of my government.

BACKGROUND

In a television address to the nation on March 23, 1983, President Reagan said:

> " ... Let me share with you a vision of the future that offers hope. It is that we embark on a program to counter the awesome Soviet missile threat with measures that are defensive. Let us turn to the very strengths in technology that spawned our great industrial base and that has given us the quality of life we enjoy today ..."

He called upon the American scientific community,

> " ... those who gave us nuclear weapons ... to give us the means of rendering these nuclear weapons impotent and obsolete."

The echoes of this address, dubbed the "Star Wars Speech" by critics, still resound; and one does not need a crystal ball to predict that they will continue to be heard for a long time. This should be no surprise: defense against ballistic missiles is an important and complex issue, and its impacts upon NATO's agreed strategy of deterrence and defense should be studied carefully and in detail, as should the implications for future arms control negotiations.

In Western Europe, the tone of the editorials of the leading newspapers was preponderantly critical;[1] and, in the U.S., the issue revived the anti-ballistic missile (ABM) debate of the late 1960s. Initially, most West European politicians expressed skepticism about the feasibility of the American plans and seemed, moreover, to be highly irritated by the fact that they had not been consulted in advance.

Yet for defense analysts the subject itself could hardly have come as a surprise. They must have noticed the evolutionary changes in technology, the growing American resentment over the disappointing results of arms control

negotiations, and the increasing concern about both the growth of the Soviet Union's offensive forces and its ballistic missile defense (BMD) efforts: all factors that made an American response almost inevitable.

The Americans had, in fact, stepped up their research efforts in the late 1970s, although this decision did not receive wide publicity at the time. Suspicions concerning the use of directed energy weapons in an ABM role were fueled in the mid 1970s when the Soviet Union embarked on the construction of a directed energy test installation in Semipalatinsk in the Kazakhstan military district. Satellite pictures of the work in progress gave rise to a controversy within the American intelligence community that took some years to resolve. Air Force intelligence experts believed from the beginning that it was a particle beam weapon (PBW) test facility, though others, most notably CI[illegible] technical experts, disagreed. The CIA analysts considered PBWs to be beyond the ken and scope of Soviet science, because it implied that the Soviet Union was ahead in seven key technology areas.[2]

This debate was still going on when President Jimmy Carter took office in 1977. At first the President did not seem to take the Soviet efforts very seriously. But within 18 months he modified his views as satellite information confirmed the earlier reports of the Air Force. This evidence convinced President Carter that the Soviet Union had taken the lead in beam weapons research and that steps had to be taken to redress the balance. By Presidential Directive No. 48, he ordered an expansion of the research effort, mainly to prevent a Soviet "break-out" from the ABM Treaty.[3] Funds for the programs went up sharply and their management was reorganized. Of course, a more generous allocation of funds does not produce immediate results, especially in advanced research projects such as high-energy lasers and

particle beam weapons. But with their usual flair for improvisation and by extensive copying from Soviet programs,[4] the Americans succeeded in establishing a firm research base.

EVALUATION OF THE PLANS

After the March 23 address, President Reagan issued National Security Study Directive 6-93, ordering an evaluation of technologies to counter ballistic missiles. Closely coordinated studies were conducted from June to October 1983. Dr. James Fletcher headed a team of scientists that reviewed the technologies and weapon systems for ballistic missile defense. The team concluded, among other things, that it was best to aim for a space-based defense consisting of multiple layers.[5] Evidence of progress should be demonstrated by testing critical components. The implications for defense policy, strategy and arms control were studied by two groups: an interagency group led by Franklin C. Miller and a group of outside analysts headed by Fred Hoffman. If the Fletcher team considered technological demonstrations to be markers along the path to be followed by research, the Hoffman group viewed intermediate options as important in their own right. One of the intermediate options the Hoffman panel considered was an Anti-Tactical (Ballistic) Missile (ATM or ATBM) system. Such a system would combine advanced midcourse and terminal tracking systems and ATBM weapons against the short-range missiles threatening Western Europe and could conceivably be available in the 1990s.[6] The advanced components could, later, also play a role in the defense of the United States.

After the reports had been combined in one interagency report,[7] President Reagan endorsed most of their conclusions on January 6, 1984 in National Security Decision Directive (NSDD) 119.[8] He announced the

initiation of a focused program to demonstrate the technical feasibility of enhancing deterrence and thereby reducing the risk of nuclear war through greater reliance on a defensive strategic capability against ballistic missiles. The program is intended to advance technology to the point where a decision can be made and development and production undertaken if that is deemed necessary. All SDI-related programs are to be managed by a single project manager - Lt General Abrahamson - taking his orders directly from the Secretary of Defense. Over and above the 1.4 billion dollars already appropriated in the 1985 fiscal year, the Defense Department requested 3.7 billion for fiscal year 1986, while an estimated 21 billion dollars will be needed for the 1983-1989 period.[9] As the SDI program is largely made up of projects started earlier, this research budget means an increase of 30 to 45 percent. Without SDI, an estimated 15 to 18 billion dollars would have been needed to fund the ongoing programs.

The Strategic Defense Initiative is a research program, not a weapons development program, nor is it a program with preconceived notions of what a potential defensive systems against ballistic missiles should entail. It is too early in the program to speculate on the kinds of defensive systems that might prove feasible and desirable to develop and deploy. Emphasis in the program is being given to non-nuclear weapons for defense.

Overall, the Strategic Defense Initiative Organization's program objectives are to:

- Develop a comprehensive research and development program to demonstrate key technologies for defense against ballistic missiles;
- Provide the basis for an informed full scale engineering development decision in the early 1990s;

- Protect the option of a near term deployment of a limited ABM capability as a possible response to Soviet ABM breakout;

- Emphasize non-nuclear kill mechanisms;

- Provide an arms control environment conducive to substantial reductions in offensive nuclear weapons;

- Coordinate the SDI with other defense programs and support other strategic defense missions.[10]

American officials point out that the research phase of the SDI program does not represent an attempt to deploy specific systems. It is, therefore, no substitute for current nuclear and conventional force modernization plans or for arms control efforts.

The question has arisen whether SDI could ultimately make nuclear weapons obsolete. It should be pointed out that, even with a multi-layered system, the defense of cities and industrial regions will pose many problems. The number of targets is quite low and an overall effectiveness of 98 percent or more will be a demanding task, especially against massive attacks. As such attacks only make sense as a retaliatory response to an attack on cities, the huge effort needed for this "assured survival" option could be wasted. As long as the Soviet Union does not have such an option, it would seem preferable - and cheaper - to deter such attacks by relying on offensive forces. Although President Reagan in his 1983 address also asked the scientific community to devise the means to render nuclear weapons "impotent and obsolete," this vision is not the official goal of the SDI project.

From recent statements by government officials, the following objectives of the SDI program emerge:

- Enhancing deterrence, strengthening stability, and thereby increasing the security of the United States and its allies.[11] In the view of American officials, the relentless improvement of the Soviet's offensive nuclear forces, together with their pursuit of active and passive defenses, could lead to an erosion of

stability and of the ability to deter aggression against the United States and its allies. These negative force trends cannot be met solely by offensive nuclear forces.

- Maintaining deterrence by undermining the Soviets' confidence in their ability to achieve the strategic objectives of a contemplated attack. This "strategy denial" objective can be achieved before a more comprehensive layered defense is in place by deploying components of the system at an early stage. The progressive defense of critical assets such as C^3I facilities (point defense), ballistic missile bases (limited area defense or preferential limited area defense), and other high-priority military assets against attacks with non-nuclear and nuclear ballistic missiles faces Soviet planners with increased uncertainties and a correspondingly lesser degree of control. Soviet military actions at various levels of conflict may, thus, be deterred. In this way, defensive systems can also provide reassurance for the NATO allies.

- Maintaining American arms control objectives. In the American view, research on defensive systems against ballistic missiles could be a hedge against a possible Soviet "break-out" or "creep-out" from the constraints imposed by the ABM Treaty. In the research phase, the American efforts will be consistent with the ABM Treaty and with other treaty limitations. Vigorous research will enable the United States to respond swiftly if the Soviet Union abrogates the ABM Treaty. The research effort, itself, is nonnegotiable, however, because a treaty designed to end military research could not be verified. American arms control objectives could also be met if effective defensive systems were to result in the negotiation of appreciable reductions in offensive nuclear weapons.

- Enhancing safety against the accidental use of nuclear weapons or unintended nuclear escalation.[12]

For these objectives to be achieved, future ballistic missile defense systems and components must meet certain requirements. They must be:

- Survivable. Otherwise an aggressor would first direct his attack against the most vulnerable elements of the defensive system, neutralize them, and then attack the other targets.[13] If defensive systems were, themselves, tempting targets for a first strike that would decrease rather than enhance stability.

- Cost-effective. Defenses against ballistic missiles must be cost-effective in relation to the offensive ballistic missiles against which they are to be deployed. If a proliferation of offensive ballistic missiles, warheads, or anti-defense countermeasures were cheaper than enhancing the defenses that would be an incentive to increase offensive forces.[14] Furthermore, only cost-effective

defensive systems would provide a leverage in arms control negotiations with the Soviet Union. They could induce the Soviet leaders to agree to bilateral reductions in the offensive nuclear forces and to rely on a more defensive posture.[15]

- Affordable. This requirement is, of course, largely dependent on the first two.[16] If, for instance, the United States and the Soviet Union could agree to a drastic cut in offensive nuclear forces, funding priority could be given to defensive forces.

THE STRATEGIC DEFENSE INITIATIVE AND WESTERN SECURITY

An analysis of the merits of the SDI is of great importance as the program could have a considerable impact on NATO's strategy of flexibility in response. Such an analysis must be based on a factual evaluation of the realities of the 1980s in which ballistic missile defenses are viewed in the proper context. ABM weapons cannot be looked at in isolation; they are closely related to other nuclear, chemical, and conventional weapons and are, thus, an integral part of the total force balance.

However, force comparisons which take all relevant factors into account are difficult to achieve. Even assessments devoted to comparisons of numbers - weapons, people, or units - show differences, depending on the pessimistic or optimistic views of the analyst who evaluates them. Yet brighter assessments of the force balance are optimistic only in comparison with more pessimistic views. Few, if any, of them show areas in which NATO has a clear advantage; and there is no assessment available which does not show that in the 1970s and early 1980s the balance of forces shifted against the West.[17] Although there is still some controversy concerning the scope and meaning of this shift, no analyst contends that in the military sense the present-day Soviet Union is not a mature superpower. Modernization and expansion of the Soviet armed forces, moreover, were undertaken not in single areas but across the board.

At the strategic nuclear level, the deployment of a new generation of ICBMs, and especially the "heavy" SS-18 Mod 4, is seen as a direct threat to the American Minuteman force. As some of these new missiles are mobile, the vulnerability equation will in future be even more disadvantageous to the West. The greater vulnerability of the American ICBMs has consequences for NATO's strategy of flexibility in response. Not so much in the sense that a preemptive attack on the United States, thus, becomes more likely, but in that it undercuts the credibility of extended deterrence by making the use of limited nuclear options planned for the ICBM force for this purpose far more risky.

The diminished credibility of the extended deterrence function of the American strategic nuclear forces is compounded by the shift in the regional nuclear deterrence forces, or theater nuclear forces (TNF). Although the deployment of Soviet longer-range weapon systems, such as the SS-20 missile and Backfire bomber, has received most publicity in the West, what is really happening is an overall modernization and expansion of Soviet TNF. Since the mid-1970s, more than 15 new weapon systems have been introduced in the Soviet armed forces, including new supersonic cruise missiles. In comparison, the Western record on TNF modernization can be described as patchy at best. As a result of both the Soviet programs and NATO's reluctance to introduce new weapon systems, the earlier lead in TNF has been lost and in most areas there is now a clear-cut Soviet superiority. The result is that the former "balance of imbalances," in which superiority in the nuclear forces compensated for NATO's lack of conventional combat power, no longer exists. Viewed in this light, it can only be concluded, in my opinion, that the credibility of NATO's strategy is stretched to the limit. In the past an aggressor could be virtually certain that his attack would provoke a nuclear response, now he may

be tempted to calculate that a conventional attack might succeed without crossing the nuclear threshhold. This, of course, still deters, but less than in the past; and it leaves room for miscalculation.

It is clear that a change of strategy would not solve the vulnerability problem of the American ICBMs. Nor would a proliferation of offensive nuclear weapons be a viable option. The Soviet Union has shown that it can face up to competition in this area, and probably with less financial and political difficulty than that experienced in the West. The never ending story of the troubles of the MX is a case in point, as are the protests against the deployment of Pershing II and cruise missiles in Western Europe. Nonetheless, the decisions of some NATO countries that have permitted the deployment to proceed have particularly encountered this negative reaction. As other alternative measures of alleviating ICBM vulnerability were found to be too expensive, of dubious military value, or politically unattractive, active defense seems to be the only possible solution. With a multi-layered, space-based ABM system focused on the protection of the American strategic nuclear forces and their command and control assets, the credibility of their extended deterrence role could be enhanced. Such a system makes the maximum use of technologies (sensor technology and fast computers) in which the West is ahead and could create a new "balance of imbalances" in which the Soviet lead in offensive nuclear forces would be offset by smart conventional defensive weapons.

THE STRATEGIC DEFENSE INITIATIVE AND THE DEFENSE OF WESTERN EUROPE

Although less vulnerable American, strategic nuclear forces are of considerable importance for the security of Western Europe, particularly as American security remains coupled with that of NATO Europe. An analysis of the nature of the military threat and Soviet military doctrine suggests that added measures are needed to maintain the credibility of NATO's strategy.

Owing to the favorable "correlation of forces" on the nuclear level, Soviet strategists consider an early use of nuclear weapons by NATO to be less likely. Furthermore, in their view a conventional offensive, preferably in the form of a high-speed meeting engagement on multiple axes launched before all army corps have completed their defense preparations,[18] can impede NATO's use of theater nuclear weapons, or at least render it extremely difficult. NATO's Supreme Command will have greater difficulty in assessing the military situation than would be the case with a limited number of spearheads. Added to this, allied consultations on the first use of nuclear weapons will be hampered so that NATO's defense line could be breached before any such decision can be taken. Moreover, a conventional war has some added advantages for the Soviet Union. Damage to the country, itself, can be minimized and conventional reinforcements can be brought forward faster than American reinforcements. In the opening phases of the war, an important element of the offensive would be the conventional air and anti-air operation, including not only successive waves of air attacks, but also missile and artillery barrages, as well as assaults by airborne and heliborne units supported by Spetsnaz sabotage teams and other special purpose troops. Targets would be NATO's nuclear assets, command posts and communications nodes, and air defense capabilities throughout the theater.[19]

As long as Soviet military commanders regard a "Blitzkrieg" type of conventional offensive as the key to a quick victory, the credibility of a strategy of flexibility in response will be called into question. The question of how to restore this credibility is not easy to answer. Relying more on theater nuclear forces as in the 1950s, does not look like a viable option. A return to the "tripwire" concept would certainly lower the nuclear threshhold and weaken deterrence. The political costs would be very high, and it could even lead to a severe erosion of public support for the Alliance. Another option, an increase in NATO's conventional forces to the point where they could withstand any form of conventional attack, also seems to be out of the question. Soviet conventional forces are cheaper than the comparable Western forces, while demographic factors would make extra demands on future allied manning levels difficult to attain. This does not mean that an improvement in NATO's conventional forces is not called for. There is no doubt that it is, but it must be done in a manner that is cost-effective. The minimum requirement would be that the prospects of such success of an integrated high-speed conventional offensive would shrink in the eyes of Soviet military planners to the point where the use of nuclear weapons by NATO would seem almost certain. By shoring up conventional defense, NATO would thus bolster the credibility of its nuclear deterrent.

NATO is developing plans to this effect. With its follow-on forces attack (FOFA) concept, NATO is looking at ways of attacking enemy targets in the depth of the battle area. Other plans are being devised to enhance NATO's air defenses. Together with an increase in active and passive air defense measures, attention is also being devoted to offensive counterair (OCA) operations entailing attacks on Warsaw Pact airfields with conventional

airfield attack missiles. These plans might be termed a mirror-image of the Soviet operational concepts, but with one difference: NATO currently lacks the weapons to implement them.

Although it cannot be denied that the measures envisaged are very important, other measures to bolster NATO's conventional force posture such as increasing ammunition stocks and reducing the vulnerability of C^3I and nuclear assets are also necessary. The measures would not be aimed at the construction of a conventional defense that could withstand any attack almost indefinitely, but at complicating the chances of a Soviet-style conventional offensive.

At least as important as the points enumerated above is the question of a defense against tactical ballistic missiles. Without such defenses, NATO's air defense and command and control systems are put at risk by tactical ballistic missiles armed with conventional (or chemical) warheads. In the near future, a barrage of successor models of the SS-21, SS-22, and SS-23 missiles could degrade NATO's air defenses and reduce its ability to control the air battle to the extent that the defenses could collapse at an early stage. In any event, without a defense against such missiles most of the measures to bolster NATO's conventional defense posture now being contemplated are likely to be less effective. In the short term a combination of American early warning, surveillance and tracking satellites backed up by high-flying airborne infrared sensor system - for instance a derivate of the American airborne optical adjuncts and ATBM missiles to defend essential assets would seem to be the best solution. By deploying missiles that can be launched against both aircraft and missiles, preferential defense tactics could be used to complicate Soviet attack plans. This type of defense is based on the principle that if the whole target set cannot be defended successfully against

a protracted attack with different kinds of weapons, it is better to concentrate on the defense of a few elements of the set, such as important radars, AWACS, or F-15 airfields. As long as the attacker is unable to ascertain which targets will be so defended, his uncertainties will increase as a straightforward "saturation" attack would be ruled out. Such a "strategy denial" type of defense focused on ballistic missiles would have a synergistic effect. By fending off a surprise barrage attack of ballistic missiles, NATO's air defense forces would be better protected. This would place them in a stronger position to engage manned aircraft or cruise missiles. Furthermore, as ATBMs could be used against both nuclear and non-nuclear ballistic missiles they would enhance not only NATO's conventional force posture but its nuclear force posture as well.

It is important to note that a defense against shorter-range missiles differs from a defense against weapons of intercontinental range. The prospect of attacking short-range missiles with a multi-layered space-based defense system seems in any case to be remote. The relatively short flight time of the missiles reduces the engagement time, while the fact that the culmination points of their trajectories are relatively low (100 kms and less) could pose additional problems. On the other hand, shorter-range missiles are rather slow. Their reentry speed is less than half that of high-speed ICBMs (3 kms/sec and less compared with about 7.6 kms/sec for ICBMs). Added to this, the relatively small payload of the missiles precludes the use of multiple nuclear reentry vehicles (MIRVs) on weapons like SS-21 and SS-23 (and probably also the SS-22), while the MIRVing of non-nuclear warheads is, of course, out of the question. So in some respects an endo-atmospheric defense against shorter-range weapons presents fewer difficulties than a defense against heavy high-speed MIRVed ICBMs. As a backup for the mobile

point defense ATBM, high-flying aircraft with medium-range laser weapons or electromagnetic rail guns would probably give the best results. Another area for research would be the possibility of mounting medium-energy laser weapons (or their mirrors) on remotely-piloted vehicles or RPVs. Long-range high endurance RPVs developed for the American Compass Cope program proved in tests to be capable of remaining airborne for over 24 hours while patrolling at 50,000 to 70,000 feet at 0.6 times the speed of sound.[20] Though their payload was comparatively small (1,200 pounds), it is probably well within the bounds of present technology to develop heavier models with larger payloads. Laser aircraft or RPVs have several advantages over ATBMs. They are multishot systems, probably cheaper than ATBMs, and suitable for both preferential point defense and (limited) area defense, thereby increasing the uncertainties for the attacker. In some areas with high mountains (France, Spain, Italy), RPVs could also operate in conjunction with "laser forts" for rear area protection. An additional advantage of laser aircraft and RPVs is that they could be designed in Western Europe and, thus, offer better prospects for West European cooperation.

THE STRATEGIC DEFENSE INITIATIVE AND THE FRENCH EUREKA

On April 17, 1985, French Foreign Minister, Roland Dumas proposed to his EEC colleagues (including the Spanish and Portugese Foreign Ministers) that their nations join forces in a research program on predominantly civilian technological application.[21] Designed to create a "Technological Europe," the program would focus on six key technological areas: optronics, new materials, high-energy lasers, large computers, artificial intelligence, and high-speed microchips.

The plan called for the establishment of a European research coordination agency, or EUREKA, to monitor the activities of the participating countries. For each of the technological areas, a committee of government officials and representatives of the industries and universities involved would be set up to coordinate activities. Funds would be provided by the governments of the participating countries and the institutions taking part in the research program. EUREKA's activities would be closely linked with those of the European Commission, as success would partly depend on the Commission's plans to open up markets and define common European standards. EUREKA, it was added, was not yet a comprehensive plan.

Later, on April 23, 1985, after the meeting of the Foreign and Defense Ministers of the WEU countries in Bonn, Minister Dumas stressed that EUREKA was a vast long-range civilian program, albeit with military implications.[22] In his view, the SDI was just the opposite, namely a military program with vital civilian spin-offs. He stated that the challenge to Europe was primarily of a technological nature; the military challenge would come later.[23] Taking space research as an example, he said that the economic benefits would be of major importance, but that the research would also pave the way for the development of such military hardware as surveillance satellites.

After the Bonn summit meeting of the seven major industrialized countries on 2-4 May 1985, at which President Francois Mitterand announced his decision not to participate in the SDI program, the French redoubled their efforts to recruit European support for EUREKA. By the end of June, the project had gained considerable momentum. The program was supported by the FRG and the United Kingdom, and it found a positive response at the EEC summit meeting in Milan on June 26, 1985. A white paper on EUREKA, entitled "The Technological

Renaissance of Europe," was issued by CESTA (Centre d'Etudes des Systemes et des Technologies Avancees). It proposed a series of 24 concrete joint projects subdivided into five areas.[24]

At the invitation of the French government, the Foreign, Economic Affairs and Technology ministers of 17 nations gathered in Paris on July 17 to discuss EUREKA. Besides the representatives of the ten EEC countries and of Spain and Portugal, the meeting was also attended by delegations from Switzerland, Sweden, Austria, Norway, and Finland. Although no concrete resolutions were adopted, the French succeeded in reducing some of the uncertainties surrounding their plan. Moreover, when President Mitterand announced that in 1986 one billion FFrs would be made available for EUREKA, the European industries responded with preliminary proposals.

It seems to me that it is difficult to compare SDI and EUREKA, firstly because as EUREKA is still not clearly defined, the difference between the two plans could ultimately be less pronounced than the following analysis suggests. Moreover, it is important to note that participation in the EUREKA program does not preclude European participation in the American SDI. In theory, at least, countries - or industries - could participate in both programs.

From the management point of view, the American setup is clear, effective, and efficient. SDI is a national program with a flexible management organization and clearly defined lines of political control. The Defense Secretary drafts the annual budget for the program and Congress through various committees with extensive experience in the review of R&D projects, supervises it, and appropriates the funds. Whatever organization finally evolves for EUREKA, it will probably be less flexible than the SDI organization. If, for instance, an agency type of organization were to be

decided upon, management would entail a large number of actors. With 17 countries participating, they could in theory amount 17 times the national ministries involved, plus the major contractors (paying 50 percent of the bill), plus the necessary representatives of the European Commission.

The French government has emphasized that EUREKA is, in essence, a civilian program and, as such, is not at odds with SDI. In reality, it is reasonable to assume that the vast majority of the technologies of both programs can be used in both the civilian and military spheres. In the specific technology areas enumerated here, the resources - scientists, technicians, money, and facilities - are, in most cases, the same whether used in civilian or in military R&D projects; only their objectives are different. SDI will probably have a positive effect on the American economy, although it seems to be unlikely that the program could pay for itself. The program will strengthen the American technology base and is likely to give the Americans a competitive edge on the West Europeans in the areas of space business, "smart" conventional weapons, and civil airliners though much will depend on European reactions. A vigorous European program could also help to prevent a possible "brain drain" from Western Europe.

It is not clear whether the EUREKA program could have that effect. Though it covers broadly the same technology areas as the SDI, it remains to be seen whether the program will be adequately funded. As EUREKA is a civilian development program, spin-offs to the economy would be direct. The participation of countries such as Finland, however, could increase the Americans' concern over the transfer of technology to the Soviet Union and could be a reason for excluding West European firms working on a EUREKA project from participation in the SDI. This would quite certainly be the case

if the DDR were allowed to take part in EUREKA, as Mr. Honecker seems to have suggested to Willy Brandt.[25] Other disadvantages are that EUREKA, in contrast to the SDI, does not have a "technology-push" type of research program - which will probably pose the greatest challenge to Western Europe in the long run and that there is a considerable overlap with EC projects. Some see the civilian nature of EUREKA as an asset, which they believe will give it the advantage of broad participation. Though true, this still leaves open the question of a defense against the medium-range ballistic missiles which threaten Western Europe. Sooner or later the Americans will come up with a suggestion for defending critical American and allied installations against this threat. If no West European alternatives are available, the only choice will be to buy American weapons. This could have an adverse effect on the two-way street issue in particular, and on transatlantic relations in general.

WEST-EUROPEAN PARTICIPATION

The West European political leaders reacted slowly to President Reagan's March 23, 1983 speech. Some of them probably hoped that the plan would simply fade away. When it became clear that this was a futile hope, Britain, the FRG, and Italy publicly supported the program, albeit it strings attached. Most of the smaller technologically advanced countries (Denmark, the Netherlands, and Norway) declined to participate in the project, thereby, in fact, creating a kind of "Principal Nations Approach" in Western Europe, a policy to which they are normally opposed.

At this stage, it is primarily on account of practical considerations and the necessity of determining priorities that my country has, alas, concluded that the Netherlands government should not, itself, participate in the SDI research, without prejudice as regards the concept. In summary, these practical conclusions are that the costs and commitments which participation by the Netherlands government would entail are not justified by the benefits it would be likely to have for Dutch technological capacity and the Dutch economy.

The involvement of the government will be limited to providing the customary assistance and support to companies and research establishments in tendering for contracts for research projects. If necessary the government will consider whether new arrangements should be reached with the United States government on the conditions for participation in SDI research by Dutch companies and research establishments.[26]

I think the SDI was and is a challenge to Western Europe. It was, in a sense, a test of the solidity of transatlantic relations, an incentive to move West European cooperation beyond the declaratory stage and an opportunity to raise its technological level. Up to now, Western Europe has, in my opinion, failed on all three counts. There are many reasons for this. Domestic problems, exacerbated by the declining popularity of the leaders of the major West European countries, probably lie at the heart of the matter; but there are other factors as well, such as the fear of straining economic and political relations with the Warsaw Pact countries. As things stand at the moment, Western Europe seems to be more divided than ever. It is in danger of a division into three tiers: Britain, the FRG, and Italy; France, in company

with the majority of the smaller technologically advanced countries which declined to participate in the program and the countries lacking the technology base, needed to play a major part.

SUMMARY AND CONCLUSIONS

The aim of SDI is to secure and deploy a thoroughly reliable defense against Soviet strategic and intermediate-range missiles. SDI is a research program and the research will last for some years. The program is within the ABM Treaty limitations, despite Soviet violations of that treaty.

It is too early to speculate on the kinds of defensive systems that might prove feasible and desirable to develop and deploy. The purpose . the defense options is clear: to find a means to destroy attacking ballistic missiles before they can reach any of their potential targets.

The SDI program is designed to enhance allied security as well as US security. SDI represents no change in the commitment to deferring war and enhancing stability.

As is obvious in the above, I personally support the Strategic Defense Initiative. It can be an effective counterweight against Soviet military doctrine, and thus reduces the probability of war. EUREKA is not an alternative.

One of the early options of the SDI, i.e., a defense against tactical ballistic missiles, is of vital importance for Western European security. The SDI makes the long-term competition with the Soviet Union a bit more manageable, because it concentrates on technological areas in which the West has demonstrable superiority, and is an effective at-least-partial offset for Soviet quantity: high production rates of weapons across the spectrum. Adoption of a "wait and see" attitude (vice early-on active participation in

SDI) on the part of West Europe would, in my opinion, contribute to "decoupling" of Europe from the United States not only on the security level, but probably on the technological and economic levels as well. Since the SDI is likely to have a profound influence on American industry overall, the requirement for European NATO involvement is all the more critical.

The SDI is also the principal Western "bargaining chip" in the imminent arms control talks with the new Soviet leadership. It could contribute to a reduction in the Soviet "heavy" counterforce ICBMs, the most dangerous component of Soviet offensive nuclear forces. If defensive systems cheaper than offensive ones could be developed as a result of the SDI, as is the hope in pursuing the SDI, then the competition between the two alliances could indeed be shifted from its historic offensive orientation to the defense. In the admittedly strange world of thinking the "unthinkable," such a shift can only be regarded as a move to more stable peace.

I agree with President Reagan as he says in the State of the Union Address on February 4, 1986:

> "America met one historic challenge and went to the moon. Now, America (and its Allies) must meet another - to make our strategic defense work for the citizens of planet Earth."

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